

Oil and Gas Engineering

Program Code: 0820

1. Program Objectives

To grasp solid foundation knowledge and systematic professional knowledge in Oil and Natural Gas Engineering;

To develop scientific research capabilities or the technical expertise in practical work;

To show an international perspective and potentials of collaboration and innovativeness;

To become high-level talents of professional technologies and managerial skills in the petroleum industry worldwide.

2. Program Directions

(1) Oil-Gas Well Engineering

- a. Mechanics, information and control of oil and gas wells
- b. Rock mechanics and engineering
- c. Fluid dynamics and engineering
- d. Chemistry and engineering of drilling and completion fluid

(2) Oil-Gas Field Development Engineering

- a. Theory and application of oil and gas flow in porous medium
- b. Theory and systematic engineering of oil and gas field development
- c. Theory and technology of oil production
- d. Enhanced oil recovery and oilfield chemistry
- e. Information technology and its application in oil and gas field development

3. Program Duration

3-5 years

4. Credit Requirements

Minimum 28 credits in total, minimum 13 credits for compulsory courses.

5. Course Schedule

Course Type	Course Code	Course Name	Teaching hours	Credits	Semester
Compulsory courses	L600002	Survey of China	36	2	1
	L600012	Primary Chinese Language	48	3	1
	L600025	Numerical Analysis	48	3	1
	L7020101	Advanced Colloid Chemistry of Oil and Gas Engineering	48	3	1or2
	L6020101	Physics of Fluid Flow in Porous Media	48	3	1or2
	L6020102	Advanced Rock Mechanics	48	3	1or2
Compulsory sections	L7020103	Attend 10+ Seminars, Make 1 Academic Presentation		1	1-3
	L7020104	Literature Review and Research Proposal		1	3
Elective courses	L6020103	Modern Drilling and Completion Engineering	32	2	1or2
	L6020104	Advanced Oil & Gas Reservoir Engineering	32	2	1or2
	L6020105	Advanced Oil & Gas Production Engineering	32	2	1or2
	L7020102	Principles and Methods for Improved Oil Recovery (IOR)	32	2	1or2
	L6020106	Numerical Reservoir Simulation	48	3	1or2
	L6020107	Reservoir Stimulation Technology	32	2	1or2
	L6020108	Reservoir Description and Modeling	32	2	1or2
	L6020109	Environmental Pollution and Protection in Oil and Gas Exploitation	32	2	1or2
	L6020111	Deepwater Drilling and Production Engineering	32	2	1or2

	L6020110	Academic English Reading and Writing of Oil and Gas Engineering	16	1	1or2
UPCIC Course	L6000069	UPC Intensive Curricula		≤3	1-4
Supplementary courses	L5021001	Reservoir Engineering	56	3.5	2
	L5021002	Production Engineering	56	3.5	2
	L5021003	Petrophysics	48	3	1
	L5021004	Rock Mechanics	32	2	1
	L5023001	Oilfield Chemistry	48	3	2
	L5021005	Fluid Mechanics	48	3	2
	L5021006	Fluid Flow in Porous Media	48	3	1
	L5021007	Drilling Engineering	56	3.5	1
	L5024001	Offshore Petroleum Engineering	32	2	1

Notes: 1) The students must pass HSK level 3.

2) The trans-disciplinary students choose 2 supplementary courses under the advice of the supervisor. The supplementary courses are compulsory, but will not be counted in the total required credits.